DEPARTMENT OF THE INTERIOR
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Our PUBLIC LANDS

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BUREAU OF LAND MANAGEMENT

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OUR PUBLIC LANDS . . .

"Conservation is a state of harmony between men and land. By land is meant all of the things on, over, or in the earth. Harmony with land is like harmony with a friend; you cannot cherish his right hand and chop off his left. That is to say, you cannot love game and hate predators; you cannot conserve the waters and waste the range; you cannot build the forest and mine the farm. The land is one organism. Its parts, like our own parts, compete with each other and cooperate with each other. The competitions are as much a part of the inner workings as the cooperations. You can regulate them—cautiously—but not abolish them."

(*From* "Round River—From the Journals of Aldo Leopold," edited by Luna B. Leopold, Oxford University Press, 1953.)

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COVER

During the 1959 fire season the Bureau of Land Management introduced the first crew of 16 smokejumpers in Alaska fire control. These brave men risked their lives time and time again during a fire season that began hot, dry, and charged with lightning storms. In the cover photograph two smokejumpers' parachutes are just visible to the left of the fire as they drift down to tackle the fire and keep it small. Some of these fire jumps w made at distances up to 300 miles and more from base operations. For more of this st see page 3.

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BLM BATTLES FIRE DURING 1959

NO enemy of conservation rivals the destructive power of fire. Every year millions of dollars worth of valuable natural resources go up in smoke—forest, grassland, tundra, and desert. In addition to immeasurable losses of harvestable resources, fires also destroy the shelter and food for wildlife, and leave ugly, naked land to the mercy of rain and wind erosion.

Fire protection and control on lands cared for by the Bureau of Land Management is a job of ormous dimensions. It involves fire protection d fire suppression on a total of some 386 milion acres, of which about 225 million are in Alaska and 161 in 12 other States.

During calendar year 1958 BLM fire suppression crews went into action on 1,359 fires and held the burned area to 933,796 acres. In 1957 1,230 fires had burned 5,531,807 acres. Of the 1958 total, 824 of the fires burned 676,253 acres on BLM lands. The other 535 fires swept over 257,543 acres of adjacent private lands and were put out by the Bureau to protect nearby BLM lands.

In California, Oregon, Washington, Idaho, Montana, New Mexico, and Minnesota the Bureau handles part of the fire control job through protection contracts. These contracts are made with other Federal, State, or local agencies. On lands under contract protection 299 fires burned over 11,771 acres. The total cost of contract fire protection during fiscal year 1959 was $1,005,000 for the safeguarding of some 5,736,300 acres.

During the past year the Bureau has given top priority to the development of a smokejumper installation in Fairbanks, Alaska. This involved constructing the necessary headquarters facilities, parachute loft, and the modification of a cargo plane to permit safe exit on fire jumps.

By the end of the fiscal year 15 seasoned smokejumpers were helping to solve one of the most difficult problems facing fire control efforts in Alaska—getting to fires while they are still small. These smokejumpers, for whom the glamour of parachuting onto forest fires soon turns to seemingly endless hours of smoke and fatigue, will make it possible to put skilled teams on many fires in the remote interior of Alaska which in the past would have burned uncontrolled until stopped by nature. Some fire jumps will be made 300 miles or more from home base and civilization. There are no roads where these men will often land!

By the last day of the fiscal year, BLM's 15 smokejumpers, who had been on duty less than a month, had already made 109 jumps on 25 fires. They had completely put out 11 fires, including one that had gone to 30 acres. But the blowup conditions which Alaska fire control men faced could hardly have been encouraging. On that same day there were over 70 fires burning! BLM had 538 emergency firefighters and 31 permanent BLM personnel on 23 of these. Forty-seven fires were as yet unmanned and uncontrolled!

BLM has greatly expanded the use of borate drops to put out fires or hold the lines until ground forces arrive. During the 1958 fire season 240 tons of borate (a chemical that is mixed with water to form a slurry that is spread from airplane tanks) were dropped on fires in Alaska. In the early weeks of the 1959 season Alaska firefighters had already dropped 172 tons on 127 sorties. Twenty-seven fires had been completely controlled by borate alone. Other drops had greatly helped the ground crews in their struggles to control the fires. Borate has also been used in large quantities on western range fires.

In spite of the increased efforts being made by BLM to control Alaska fires, all such efforts are hampered by the sheer size of the job and the geographic facts of life. Distances are long, summers are very dry, and dry lightning storms are common

(Continued on page 12)

CHANGING PATTERNS OF LAND USE

from remarks by EDWARD WOOZLEY, Director, BLM, at the 1959 Western Resources Conference, University of Colorado

As I was thinking about what I was going to say to you today and studying the program of your conference I was again amazed at the scope and complexity of the subjects which necessarily come to mind when people get together to talk about resources. Perhaps it is this inherent complexity that makes this subject so important, and, at the same time, so difficult to pin down to the kind of specific details we are all looking for. When we think how difficult it would have been only a few years ago to predict accurately what is happening today, I sometimes wonder whether somebody in the future will not be saying the same thing about the predictions we are now making.

Of course, our tools for predicting certain events in the future have become much better and we are now able to obtain much more and better information about many of the factors that affect things that will happen in the years ahead.

It seems to me that one of the most important factors which will influence the future use of land in the West will be the degree to which the Western States continue to share in the broadscale development of the entire United States and, in fact, the world. According to a recent estimate the total world population may increase from the present level of about 2¾ billion people to nearly 4 billion by 1975 and over 6 billion by the year 2000.

Hand in hand with this population growth will be other types of growth, the impact of which staggers the imagination. One of the most important immediate results of substantial population growth will be expansion in the use and consumption of raw materials. Even if there were no changes in the level of economic development and living standards, the simple fact of more than doubling the population of the world will require at least doubling raw material output and consumption, if we and the rest of the world are not to slip behind. Because many people in the world today are living under conditions much lower than those in the United States we can, I think, predict that relative raw material consumption by nations other than the United States, Canada, and Western Europe will increase at rates substantially above that of the United States.

The United States will doubtlessly share in these forms of development and part of these worldwide needs will come from the natural resource base of the United States. Other nations, too, will be furnishing many materials to meet our needs.

I recently saw an estimate that by the year 1975 the United States will be using about 3 million tons of materials of all kinds every year. This amounts to more than 15 tons of material every year by every man, woman and child in the United States—and by 1975 there will probably be over 200 million of us!

Economic growth in the United States and a similar rise in our standard of living may place enormous strains on a number of raw material resources.

Take food, for example. Using 1950 consum tion as a base, we will probably need about percent more food products by 1975 to meet the increasing demand from an expanding population. By the year 2000 we can expect to have to double our present output of foods. If we continue to increase food production in the same way we have been increasing it in recent years, we may, in fact, achieve these levels of increased food production without similar changes in the relative amount of land in agricultural crops. We will increase the productivity of lands and use new hybrids, seeds, fertilizer, and other chemicals to grow more crops on the same or less land.

About 25 percent of the land area of the United States (not counting Alaska) is now in cropland, though some of it is not now harvested. By 1975 the area of cropland may increase by about 6 or 7 percent, though much of this increase will not come about because of new lands brought under cultivation but rather by transferring some lands now in grassland pasture to cropland. At the same time it is likely that some of the lands of marginal agricultural productivity may be taken out of agriculture production and put to other more economic uses—perhaps as forest land.

Some of these adjustments in land use will affect the patterns of land use in the West, particularly those kinds of adjustments that affect the use and development of irrigated croplands. In th case of irrigated lands we know that there are stantial areas of land that could potentially be ed under irrigation—perhaps as much as 15 to million acres in the 17 western States. It is also a fact that because many irrigated lands are very productive, small additions of irrigated farmland can add relatively large amounts of agricultural production to the national output. The relative costs of irrigated land development may, however, act as a major brake on large expansion of irrigated lands.

The use of lands for grazing purposes—also contributing to food output—will perhaps be more important in the Mountain and Pacific States.

There are about 683 million acres in rangeland use, of which about 397 million acres are in private ownership (including Indian lands) and about 286 million acres are publicly owned. Of those in public ownership about 42 million acres are owned by State governments.

Increasing the productivity of western rangelands is a job that has only just begun. This is, as you know, a major responsibility of the Bureau of Land Management and it is a job of enormous dimensions. It is also a job which has been started and one which is being carried forward with the clear understanding of the importance which these lands will have in the future development of the livestock food industry throughout the Western States.

So much for food. A review of resource de-ands and other raw material commodities is en even more challenging. In order to meet e demand for power, heat, and light, the production of coal, natural gas, and petroleum will have to be doubled by 1975 and doubled again by the year 2000. Part of our increased demands for energy fuels may be met by the development of atomic energy as a source of electricity.

As for the nonfuel minerals, we will probably have to nearly double their 1950 output by 1975. For some individual minerals such as magnesium, bauxite, titanium, and cadmium, needs may increase several times over in the next few years, particularly as the result of various kinds of specialized developments in the metals field including defense needs.

We will also need much more timber and timber products in the future—probably twice as much as is now being harvested.

The impact of our expanding population and economy upon the land and resource base of the Nation and the Western States seems clear. New demands for raw materials will require increased productivity from many corners. The important question then is: "Where will all the resources come from to meet expanding needs?"

This is the all-important question and one which has been bothering people for a long, long time. It bothered Malthus who conjectured early in the 19th century that population tended to increase aster than the means of sustenance and that unless some brakes were put on population growth the world's population would be in danger of large-scale starvation. There are many people today who think that the Malthusian hypothesis is still, and perhaps even more, valid at the present time.

This same question—"Where will the resources come from?"—bothered the people who started what we now call conservation. In the final analysis conservation is simply facing up to the fact that there is a limit to the amount of resources available and that if we want to have those resources available in the future we must harmonize present resource uses with each other and with both short-term and long-term needs. This is obviously a job that is often very difficult and it is no secret that it is also a job that is often very controversial. People simply disagree about what present and future needs are and then they are also likely to disagree about the means and methods of doing the conservation job.

How then will we meet our resource needs? Many resources that we wasted or destroyed in the past are now put to use. We will have to meet many of the problems of the future in about the same way—through wise and more efficient use of what nature has given us to work with.

We will salvage more and more waste materials formerly lost or abandoned. This will come partly through the development of secondary processing technology in many fields and industries. The secondary utilization of sawdust, bark, and other mill wastes in the forest industry is a present example of a practice that will no doubt increase. Other salvage developments may be applied to whole new areas, such as the utilization of limbs, tops, stumps and other logging debris now left in the woods when trees are harvested. We are now wasting about one-fourth of all the timber cut.

Part of the increased demands will come from the recycling of materials. We will simply use some things over and over again. At the present time waste paper now accounts for over 25 percent of the fiber materials used in the manufacturing of paper and paperboard. Practices such as this will probably increase, and whole new industries may develop for the single purpose of reprocessing materials for re-use in the manufacturing and production cycle.

We will also certainly improve the technique of utilizing low-grade resources, such as ores whose mineral content has been thought in the past to be too low for economic development. Improved manufacturing and processing methods may open up avenues for the utilization of substantial areas of known reserves of low-grade ores.

Another part of the growing demand for raw materials and natural resources will probably be met by the discovery or development of substitutes and synthetics. Some of these will be developed to replace scarce or high-cost materials.

Others of them will be developed as improvements of existing materials—such as the present increasing use of aluminum in automobile manufacturing. Other substitutes and synthetics may be even more spectacular—similar to the present replacement of many metals by plastics and ceramics.

In terms of the development of all these things in the Western States, I think we may expect that they will all be applied on various occasions. For many types of development there seems to be a major brake or substantial change in many areas in the Western States. That single, important item and the one which may be the most important restraining influence is, of course, water. Without it, development is virtually impossible. With it, development is almost inevitable.

The total demand for water throughout the United States is growing at enormous rates. We are now using more than 262 billion gallons of water each day in the United States—a rate equal to 1,500 gallons, or thirty 50-gallon barrels for every man, woman and child in the United States, every single day. By 1975 we will need at least 450 billion gallons of water a day, almost twice as much as we are now using.

If the Western States and particularly the arid and semiarid West are to share in full measure with the Nation's development, some major breakthrough may be necessary as far as water supplies go. Such a breakthrough may very well come from present scientific investigations being conducted to convert salt water into fresh water. At the present time the Office of Saline Water of the Department of the Interior is heading research projects to convert sea and brackish water into supplies suitable for agricultural, industrial, and human consumption at reasonable cost. When this program really got underway in 1953 the estimated cost of converting saline water was more than $3 per thousand gallons. Present developments have reduced that cost to about $1 a thousand gallons. By comparison, residential water costs now range from about 20 cents per thousand gallons to a high of over $7 per thousand gallons in one California community. The national average is about 38 cents.

If the costs of converting saline water to water that can be used for agriculture and industry can be reduced low enough, it may then be possible to develop areas of the West for agriculture and industry on a scope far beyond present expectations. We may even be able to use water from the Pacific Ocean to recharge ground-water supplies in areas where water tables have been lowered too much.

Another major breakthrough in the field of water may be through techniques to reduce the losses of water from lakes and reservoirs through evaporation. A recent report of the Department's Geological Survey points out that more than 11½ million acre-feet of water evaporate annually in the 11 Western States. One technique to retard evaporation would use a waxy chemical (called a monomolecular substance) to spread a thin blanket over the surface of the reservoir or lake throu which the water cannot evaporate.

One way in which we could probably increa available supplies of water would be to study and reexamine the patterns and uses of present water supplies. Leaky faucets and similar situations probably waste millions of gallons of water every day.

We may also find it possible to reuse certain water, before releasing it back to the ground. We may some day be using water according to an established consumption cycle which takes into account the fact that some water uses leave the water in condition to be immediately reused somewhere else. This sort of thing may have special applicability to industrial water.

There is a fourth and probably even more important possibility as far as water development is concerned, particularly when viewed on a nationwide basis. This is to reduce materially present water pollution and open up full use of present available water supplies. As many of you know, this problem is acute in many areas of the East—it is also a problem which is now plaguing some areas of the West—and it is certainly a problem which will grow more acute in the West unless definite steps are taken to correct present pollution and to prevent it in the future.

The past history of land and resource development and use in the western United States may offer an interesting and useful contrast to the ki of use and development that may—or at le ought to be typical of the future.

Land settlement patterns and present land uses were largely the result of dynamic forces over which individual people and government had very little control. Much of the West grew after the fashion of Topsy. Under influences ranging from settlement spurred by the discovery of gold in Colorado 110 years ago to the "filling up" of the West through homesteading and other types of settlement, all the way up to the westward movement of people looking for jobs in Pacific coast shipyards during World War II and the prosperity that has followed—all of these major influences reflected uncontrolled and undirected changing patterns. Today, there are similar influences having many of the same effects. The present large-scale movement to southern California is a well populated example.

In the future, we may certainly hope that more and more time and attention will be given to planning various kinds of growth and development to minimize many of the problems that are even now with us. There are many kinds of land and resource development opportunities in the West that are not available elsewhere in the United States.

Many of the Nation's untapped lands and resources are in the West. For example, more than two-thirds of the Nation's supply of old growth

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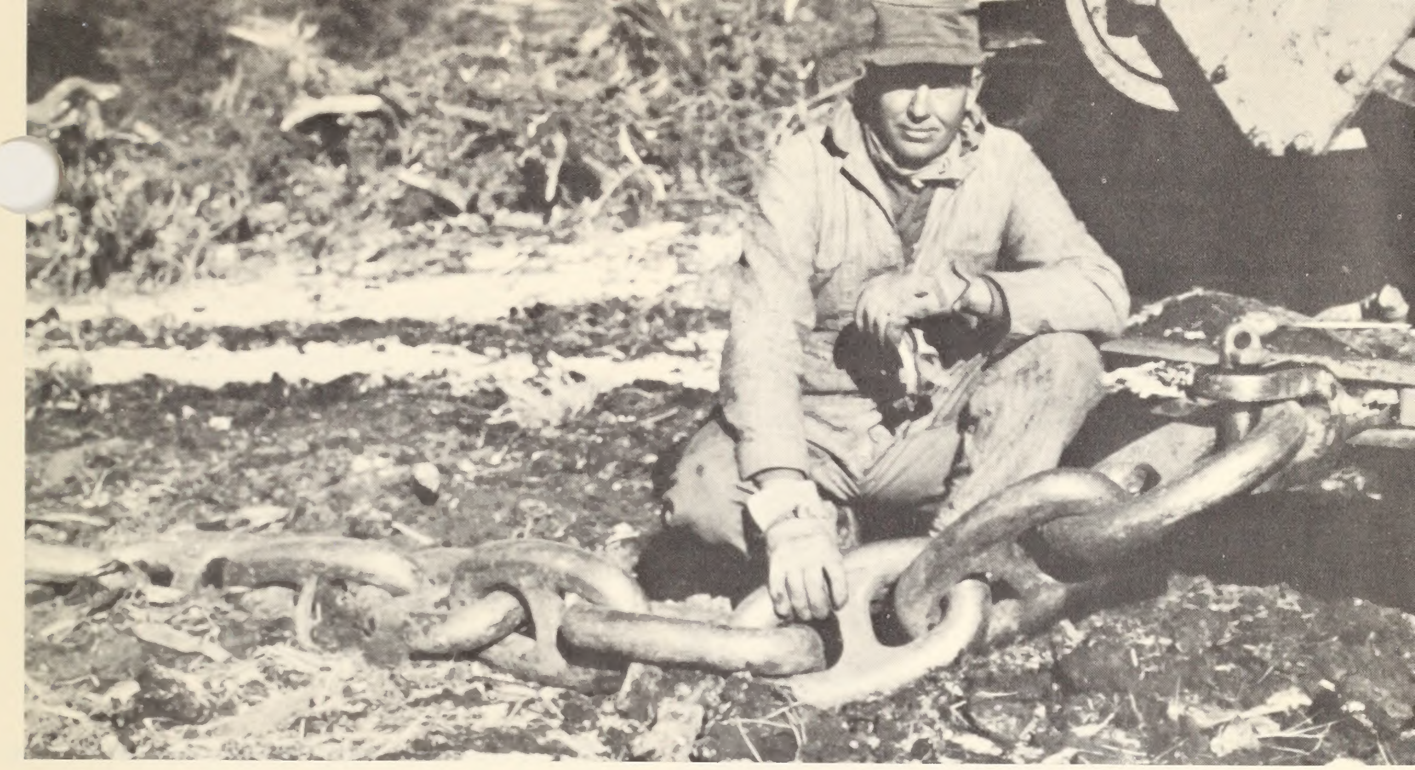

46 POUNDS PER LINK times 180 feet of anchor chain adds up to an important new conservation tool. By dragging the chain behind two powerful tractors in a giant loop, brush and trees come tumbling down to make room for more and better forage for wildlife and livestock.

ANCHOR CHAIN

New Conservation Tool

by **CARL LIND**, *Range Conservationist*, Canon City District Office, Colorado, BLM

It is rather doubtful that the Navy ever anticipated the use of an anchor chain for land treatment. Yet, it has happened, and such practices are occurring more and more frequently on our Federal ranges.

Stands of piñon and juniper (cedar) located in suitable areas are selected and subjected to control measures using an anchor chain. "Control" means uprooting the trees to encourage a better growth of grass.

How did such an unusual treatment originate? As far back as 10 years ago conservationists of various Western States had been delving into the use of different sizes of chains for land treatment. This was concentrated mainly on the control of such plants as mesquite and sage. Expanding upon the original program conservationists began to use the chains in controlling piñon and juniper. The practice slowly began to spread and is now a major program in many areas.

During this period piñon control by bulldozers was also tried. Although this did a better job of clearing the land, the costs were much higher than chaining. The use of an anchor chain costs about $4 an acre, which represents a substantial saving over a bulldozing operation.

Controlling piñon by means of an anchor chain is done simply by dragging the chain between two track-type tractors. Although there are no hard and fast rules concerning the requirements of either the tractors or chain, there are certain desirable standards for both.

TWO PASSES are made over each area being treated, one in each direction. In the picture above the chain is just visible in a loop between the tractors on the second pass.

Although a tractor developing 85 drawbar horsepower is not mandatory, the power is desirable. Smaller units have been used but are naturally somewhat slower and must clear a narrower swath. Rough terrain or thick stands of timber also makes a larger tractor more desirable.

The standards used in selecting an anchor chain are the length of the chain and the weight per link. A chain about 180 feet long is preferable since shorter chains have a tendency to pull the tractors toward the middle of the swath, thus reducing the efficiency of the tractors. Anchor chains weighing 46 pounds per link remain closer to the ground and do not ride over the trees as easily as lighter chains, although chains weighing 36 pounds per link have been used satisfactorily.

Several factors influence the speed (and the subsequent cost) of a "chaining" operation. Briefly, they are the size of the tractors (which is mentioned previously), topography, size and density of the trees, soil and rock, and weather.

Topography exerts a definite influence in the control of piñon. If the grade is too steep, th progress is definitely decreased, and this is gi careful consideration in selecting a site.

A thick stand of timber naturally dictates a narrower swath, and this also holds true for larger trees. Using tractors with 85 drawbar horsepower, it is seldom that a tree must be dozed out. However, this occasionally happens with less powerful tractors. Although a dense stand of timber slows the operation, any loss may be compensated for by the greatly increased forage.

Soil and rock can either hinder or help in chaining. Deep soil offers better traction for the tractors, but this is offset by the well developed root systems found in good soil. Surface rock, on the other hand, offers poor traction and is hard on equipment, but in rocky soil the root systems are not as well developed and trees are more easily pulled over. The ideal seems to be a slightly rocky soil where root systems are located in rather

CLEARED LAND is left as the area is prepared for planting and seeding
servation project.

loose strata, but where the surface still offers sufficient traction.

In most areas piñon control with an anchor chain is a land treatment that can be practiced all year long. The only aspect of weather that hinders the work is extremely heavy snow. A light snow fall of a few inches does not deter the progress.

When controlling piñon by means of an anchor chain, it is usually not sufficient to make only one pass over an area. This tends to leave many of the roots in the ground, and the downed timber is spread over a wide area. Therefore, a second pass is made in the opposite direction. This time the trees are completely uprooted by the chain and forced into irregular windrows. Quite often the chain will drag large piles of trees along the ground, thus clearing strips of land and loosening the soil for grass seeding.

Land treatment practices don't just happen, and the chaining of piñon is no exception. Piñon removal areas are selected 2 or 3 years in advance. The areas are inspected by BLM conservationists with items like accessibility, erosion, boundaries of public and private land, and so forth, in mind. These inspections determine the specifications of the contract.

After the contract is written and sent to the headquarters office, a date for a "show-me-trip" is assigned. Interested contractors then have an opportunity to inspect the area and send in their bid.

With the issuance of the start order, the conservationist supervises the contract until its completion. The acreage is then derived from aerial photographs, and the cost per acre is computed.

Is this conservation? Is the tearing up of stands of timber good land management? Is the baring of the soil to the natural elements consistent with the multiple use policy? Surprisingly,

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e productivity of these lands will be increased several times by this con-

INCREASED PRODUCTIVITY from range conservation projects such as these will help meet the needs for the growing Nation. At the same time better ground cover will provide better protection from erosion by wind and rain.

NEW GRASS marks the location of a piñon and juniper anchor chain project. The irregular windrows left by the chaining operation are still visible in the picture.

active acres

PUBLIC LAND ACCESS

Bureau of Land Management offices throughout the West will take the initiative in working out agreements with private landowners to assure access routes for sportsmen and others to large blocks of the public domain.

The agreements will be worked out concurrent with a study of present access routes as a part of a concerted effort by the Bureau to help meet the growing needs of recreation-conscious Americans, BLM Director Edward Woozley said.

The Taylor Grazing Act, under which BLM manages some 178 million acres of land in 11 Western States, specifically provides that the land will be open to the public for hunting, fishing, camping and other lawful purposes.

In some instances, Mr. Woozley said, access to large blocks of public domain has been cut off by surrounding private lands. The extent to which this has happened and recommended solutions will be determined by the survey. Field reports and plans are scheduled for completion by the end of the fiscal year next June 30, he said.

"We are confident," Mr. Woozley said, "that in the majority of cases cooperative agreements can be worked out that will protect the rights of the private property owners and still permit access to public domain. If necessary, the Government can institute condemnation proceedings to obtain access routes across private land."

He said the Bureau would concentrate upon providing access to large blocks of public domain. There are many smaller and isolated tracts of public domain surrounded by private lands which have little recreation potential. The survey will determine whether it would be in the public interest to acquire access to these smaller tracts, h said.

In addition, the Department has proposed regulations requiring the posting of signs on fences across the public domain notifying others that the land is open for all lawful purposes.

GRAZING CASES COMPILED

The Department of the Interior has published a compilation of administrative decisions relating to grazing covering the years 1936 to 1958. The 714-page volume of grazing decisions includes a comprehensive Index-Digest for ready reference and research use. Copies of "Grazing Decisions 1936–58" are available for $3 from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

Compiled by Hearing Examiner Dent B. Dalby, the book brings together a chronological compilation of decisions of the Department of the Interior in cases arising under the Taylor Grazing Act of 1934 and the Federal Range Code for Grazing District. Most of the decisions have not been previously published.

The published decisions will be especially useful to resource managers and organizations concerned with administration of the Taylor Grazing Act and to attorneys, legal researchers, range users and scholars.

MILLION ACRES CLASSIFIED FOR NONAGRICULTURAL USE

In a two-pronged action preserving areas for proper development and helping to protect the public from unscrupulous land promoters, approximately 1 million acres of land in southern California have been classified for nonagricultural use only.

The affected lands, unsuited to irrigated farm development, for lack of assured water supply, are in San Bernardino, Riverside, Imperial, Inyo and Kern Counties.

Their classification was accomplished in decisions rejecting 589 homestead and desert entry application appeals. The applications covered some 180,000 acres in the Mojave Desert and Salton Sea areas. The classification covers all or part of 94 townships in 22 areas. The townships total more than 2 million acres but substantial portions are privately owned and the classification affects only public land.

"The determination that the lands are not suited to irrigation farming will open the way to other types of classification, permitting them to be used for recreation or for urban and industrial expansion," said Director Edward Woozley of the Bureau of Land Management.

The 589 applications were originally rejected by the Bureau's Los Angeles office. Applicants appealed to Director Woozley. He upheld the rejections and the Office of the Secretary concurred.

Southern California's rapid economic growth has created great demand for these public lands. Thousands of citizens have been deceived by certain land promoters into believing the lands are available under agricultural entry. The promoters collect a fee for preparing the papers for applications they should know are certain to be rejected. In many documented cases the speculators have been shown to have filed one application after another on behalf of different applicants for the same parcel of land.

The classification will be noted on the records so that potential applicants will have plain warning that the lands are not open to homestead or desert entry filing, Director Woozley said.

Director Woozley pointed out that allowances of desert land entries in areas where there is insufficient water was against sound conservation practices.

Leveling and destroying the natural cover of the lands, where there is no possibility of irrigation, results in excessive erosion and promotes dustbowl conditions, he said.

INFORMATION ABOUT PUBLIC LANDS

BLM has announced publication of a new pamphlet of "Information About Public Lands." The new 16-page booklet contains the answers to many of the most-asked questions about public lands and resources.

"Are free lands available from Uncle Sam?" (As OPL readers know, the answer is "No.") "What are the basic steps for obtaining public lands?" "What about the 40-acre oil and gas leases I have seen advertised?" And many more.

Copies of "Information About Public Lands" are available from the Bureau of Land Management, U.S. Department of the Interior, Washington 25, D.C.

HOMESTEADING DESCRIBED

Homesteading on the unreserved public domain today is almost a thing of the past, according to "Homesteading Past and Present" published by BLM. Since passage of the Homestead Act in 1862, virtually all of the land good for farm homesteading has already passed into private ownership.

Homesteading today is limited by the availability of suitable agricultural land and by the capital investment requirements of modern farm development—all very different from the way in which a pioneer homesteader carved out a farm with plow, ax, and mule.

Beginning with a description of how the Nation's public domain grew, the booklet notes how important homesteading has been in American history. Since 1862 people have earned the right to own more than 1,400,000 homesteads on over 247 million acres that had been public domain. The booklet observes that about two-thirds of all homesteading was done in the first 30 years of the 20th century—not in the early days before 1900.

The booklet contains a brief description of modern homesteading in Alaska—the last place where homesteading is still being done by very many people. And in Alaska it may take as much as $45,000 to develop a successful farm homestead.

Copies of "Homesteading Past and Present" are available from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C., for 15 cents each.

NEW BILLBOARD RULES

Improved controls over billboards on Federal lands are provided in new regulations. They reflect additional restrictions by adopting the standards established for the interstate highway program.

The new controls have as their minimum standards the highest standards set up by the Bureau of Roads of the Department of Commerce and by State governments.

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ONE BIG STEP between airplane and a forest fire—bridged by daring smokejumpers here shown geared up and waiting to jump. One man is already on his way out the door.

FIRE

(Continued from page 3)

during the summer months. Even with the help of smokejumpers, borate dropping planes, and the most modern equipment available, a severe fire season and large burn are still possible.

Fire conditions on western range lands have been severe. Heavy growths of flash fuels and an increased number of lightning storms teamed up to produce the conditions that could have led to a disastrous fire year. In spite of these conditions BLM held the burned area to 617,000 acres.

Fire weather stations installed last year have furnished data for the new fire danger rating system. As the result the Bureau has been better prepared to meet fire conditions when they arose, and standby crews have been ready to move in swiftly as soon as a fire is reported.

Other special projects to improve fire control on western range lands included the installation of additional radio equipment, stepped-up use of borate drops and greater use of helicopters to speed crews to and from fires.

Fire control involves two appropriations. One is for presuppression operations. This must take care of all the costs necessary to build and maintain BLM's firefighting equipment, supplies, buildings, aircraft, and so forth. It pays for training crews and pays their salaries while they are not actually on fires. It also pays for all of the fire protection contracts. The other fire appropriation covers the actual cost of fire suppression.

BLM appropriations for presuppression during fiscal year 1959 were $890,100 of which $625,000 covered presuppression activities in Alaska. Fire suppression costs during fiscal year 1959 totaled $2,989,718, of which $1,457,032 involved the cos of firefighting in Alaska. The total amount spe for fire protection is, of course, only a small fra tion of the value of the resources involved.

End

CHANGING PATTERNS

(Continued from page 6)

sawtimber stands are located in the West, which has only about one-quarter of the Nation's area of commercial forest lands. Though this fact indicates the importance of increasing forestry productivity in the eastern United States it also demonstrates that for some time to come western forests will be furnishing a substantial percentage of the Nation's old growth sawtimber cut.

Another type of development which will be particularly important in the West is recreational land development, including scenic and mountain areas.

Some of these recreational developments will come about because of increasing initiative on the part of State and local governments. Some recreational programs having national significance will be developed by the Federal Government. In the Bureau of Land Management we are now engaged in a cooperative program with other Federal agencies and State and local governments for th inventory of public land recreational needs an the drafting of programs to develop needed areas.

We know that many areas of public land have present and future recreational values and that the public lands will become even more valuable for recreational uses in the future. The Bureau of Land Management recreational policy is designed to assist all recreational agencies in meeting present and future needs. Ordinarily, State and local agencies are responsible for establishing suitable public recreational areas for State or local use, as well as providing the necessary facilities and services. BLM will make every effort to cooperate with the States and localities in developing the potential recreational values of public lands.

Another kind of land development which may grow rapidly in the West deals with industries and activities which, for a variety of reasons, use relatively large areas of land in comparison with the types of development usually found around cities. Facilities for the development, manufacture and testing of jet engines and rockets, for example, require relatively large areas of land for both reasons of safety and isolation from noise. More remote, now-unused areas of the West may provide areas for similar kinds of developments on a much larger scale.

Other land uses including those used for military and defense purposes may also have important impact on the patterns of land use in th

West though it does not appear likely that any major new areas in the Western States will be set aside for this kind of use in the immediate future. It is quite likely that the total area of lands set aside for military and defense purposes in the Western States may be reduced over the years. Some of these lands may then become available for various kinds of development. Others, however, may have been used by the military services for various kinds of weapons testing operations, in which case some of the areas released from military use may not become available for immediate development. The value of the lands may not, for some years, warrant the public costs involved in decontaminating the areas.

Another kind of land use particularly applying to the West, and one which is growing significantly every year relates to the use of the "broad outdoors" for recreation purposes. This applies to extensive outdoor recreation use rather than the intensive use or development of a particular or specific area. This kind of recreation takes in the whole outdoors, and it may grow by leaps and bounds as the new interstate highway systems are built.

Patterns of land use in the West will, I think, change in the future along many of the same lines that they have been changing in the past. One hundred sixty-acre homesteads will continue to be consolidated into larger economic farm units. The cities will continue to expand farther and farther into the rural areas. Some lands now regarded as too arid or too mountainous may be settled and developed by people looking for places to live beyond the reach of the cities.

There is one additional new horizon in the field of resource development which may some day be open and available to the West for development. This is the ocean floor beyond our western coastline. As a source of food, minerals, and other materials, we have as yet never tapped the ocean floor or the waters above it more than superficially. In addition to fish from the ocean and oil from the floor of the sea, we as yet know very little about the world's marine wealth. If the world's population increases and we need more and more food and raw materials, perhaps one day man will cause the seas to part and, like our Biblical ancestors, we will find in the sea a new road to survival.

The job of locating and developing the raw materials and resource potential of the United States and particularly the Western States will be a task that is broadly shared by government, by business and industry, and by individual citizens.

As the agency responsible for more than 175 million acres in the Western States (not counting Alaska), the Bureau of Land Management will continue to play an important role in resource development.

A look ahead to the land and resource needs in the next 4 decades leads me to the conclusion that the jobs ahead will probably dwarf the accomplishments already made. The important key, however, is the fact that the decisions made today and jobs undertaken tomorrow will, in many cases, predetermine what is going to happen even by the year 2000.

A young seedling planted this afternoon on a forest slope in Georgia could be harvested—in about the year 2000. Another seedling planted here today on the lower slopes of the Rocky Mountains could in the year 2000 still be another 4 decades away from its time for harvest. In like manner the job of rebuilding the productivity of eroded grassland may take many years and only then be assured of success by adequate rain.

The jobs ahead are ones which will require forethought—planning—hard work—and cooperation in much larger measure than what we have known in the past. Your conference here this week will, I am sure, have contributed much knowledge and understanding of the problems and, perhaps tentatively, some of the solutions. From a full awareness of what the future may mean, programs and plans for the present may be built. Let's get the job done. **End**

OIL LEASING PROCEDURES CHANGED

All interested parties will be assured an equal opportunity to file applications for lands formerly under Federal oil and gas leases as the result of changes in leasing regulations. The new regulations covering filing procedures apply to wildcat lands where an existing lease is canceled, expired, relinquished, or terminated. The new regulations will not affect regular 5-year extensions of existing leases.

The new system will call for a 5-day period each month during which applications may be filed for lands involved in the previous month's canceled, expired, relinquished, or terminated leases. The 5-day period would follow the third Monday of each month or the next working day if Monday is a holiday. On that Monday each BLM Land Office will post a notice on the bulletin board listing the lands available. All applications received during the 5-day period will be treated as if they had been filed simultaneously. Priorities of applications will be determined by a public drawing procedure.

Offers to lease lands involved in the four categories of old leases must meet the acreage requirements for all Federal oil and gas lease offers.

The changes have been designed to afford all interested parties an equal opportunity to file applications for lands formerly under lease. It will incidentally save much wear and tear on the public land records. The previous system had placed a premium on making rapid searches of Land Office records each morning to find lands newly available for leasing. **End**

YOUNG TREES and browse for wildlife slides under the chain and springs back.

ANCHOR CHAIN

(Continued from page 9)

yes!—with good cooperation between man and nature.

Some soils are of such an unstable nature that the removal of the trees would have the soil miles downstream before a substantial cover of grass could be established. Needless to say, such areas are bypassed. However, in areas where piñon control is practiced, erosion control projects complement the piñon control. In other words, whenever needed, small gully plugs, detention dams, or pit dams are constructed in conjunction with the piñon control. Although the removal of the trees releases the natural grasses for rapid reproduction, seed is broadcast from vehicles or by air to help nature establish a better cover of grass on the soil.

It is interesting to note that on the second pass of the chain the smaller gullies are usually filled with trees and limbs which drop under the chain, thus forming excellent plugs at the heads of the gullies.

Much has been said concerning piñon control, but what about the reasons for such a project? The reasons and results are as follows:

The increased forage on the range land will support more livestock and offer a monetary return for the investment in the land.

After the grass is well established, the erosion will decrease since such grasses as blue grama form a mat that is superior to piñon and juniper in control of erosive water caused by melting snow and heavy rains.

Small trees and browse are usually pliant enough to allow the chain to ride over them; thus good wildlife food is not only protected, but increased by the reduction of competition.

The present demand for fireplace wood in this area has resulted in the issuance of contracts for the cutting of such timber from control areas, thus helping clear the land for improved grasslands. The timber contracts also help defray the cost to the Government since from $1 to $3 per acre is derived from the sale of wood.

Is piñon removal a losing proposition in the terms of money? We believe not. But how do you assess a square foot of top soil that is kept out of the Gulf of Mexico? It is difficult to place an intrinsic value on such soil. Yet, to deny its worth is folly. Thus, erosion control benefits are mentioned in a somewhat abstract manner. Con versely, improved forage capacity is more concrete.

Our increasing population and growing economy are placing an additional burden upon our lands. Increasing the forage capacity of Federal range land is one method of keeping pace with the demands. Piñon control does just that. The release of sunlight and additional moisture produces greatly increased forage yields, sometimes doubling or tripling the previous capacity. Under proper management this means a proportionate increase in livestock. In the long run we feel that piñon control will pay its own way in Colorado.

A very gratifying aspect of piñon control is the interest shown by ranchers. Realizing the value of such a program, an increasing number are chaining piñon on their own private lands. This fact alone acts as an endorsement to the economic feasibility of such a project. Cooperating with the Agricultural Stabilization and Conservation Committee, ranchers can obtain a maximum cost share of 50 percent of the chaining operation, not to exceed $3 per acre. Bureau employees heartily approve such actions and hope that more of this will be done in the future.

Piñon control, through the use of an anchor chain, has thus far proven highly successful. This kind of land treatment will continue to do its share towards the improvement of our Federal range lands. **End**

ACTIVE ACRES

(Continued from page 11)

But the regulations are sufficiently flexible to permit the Department of the Interior to raise the safeguards in cases where the minimum controls would be inadequate to protect scenic or other recreational values of the public lands.

They provide for close coordination between public land billboard and advertising standards set up by the Department of Commerce as part of the Federal highway program and the standards set by State authorities for other highways and roads.

Applications for billboard or advertising on public lands are handled by the Bureau of Land Management. The usual permit procedure involves the issuance of a special land use permit which, under the new regulations, would incorporate the necessary standards. The permits may be revoked at any time.

Billboard owners and advertisers on public lands are charged an annual fee based upon the fair rental value of the privilege. They also pay a $10 application service fee. **End**

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